



## ISO - LOGIC INVERTER SCHMITT TRIGGER OPEN COLLECTOR SIDE DETECTOR

### DESCRIPTION

The IS657D is an optically integrated circuit detector with schmitt trigger open collector inverter output. It is mounted in a clear plastic lateral side looking package which enables these devices to display superior mechanical resolutions, coupled characteristics and reliability in a low cost housing.

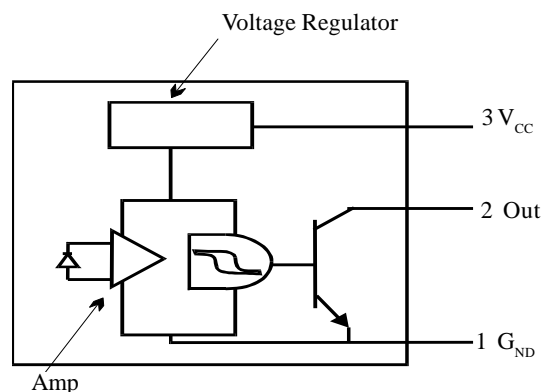
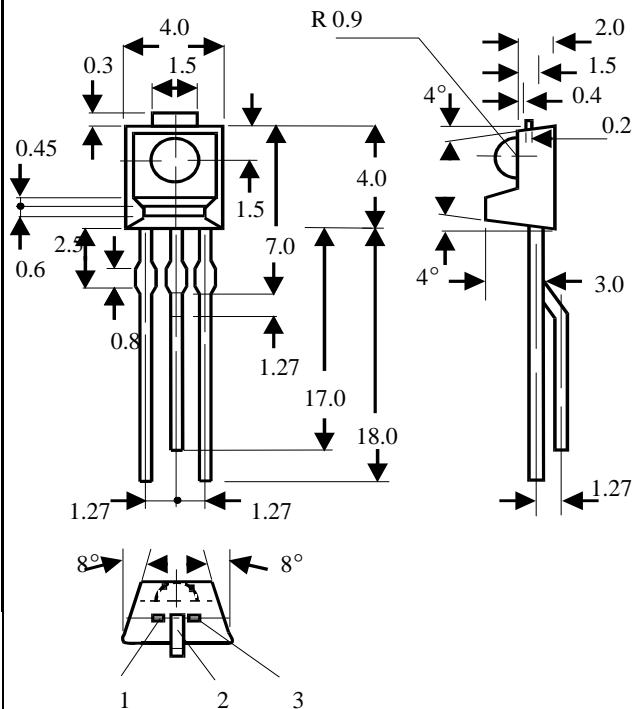
### FEATURES

- Built-in Schmitt trigger circuit
- Low level output at incident light
- Open collector output
- Lateral Side Looking Plastic Package
- High Sensitivity ( $E_v = 35 \text{ lx}$  at  $25^\circ\text{C}$ )
- LSTTL and TTL Compatible output
- Supply voltage  $V_{CC} -0.5$  to  $+35$  volts

### APPLICATIONS

- Floppy disk drives
- Copiers, Printers, Facsimilies
- VCR's, Cassette tape recorders
- Automatic vending machines

Dimensions in mm



**ISOCOM COMPONENTS LTD**  
Unit 25B, Park View Road West,  
Park View Industrial Estate, Brenda Road  
Hartlepool, Cleveland, TS25 1YD  
Tel: (01429) 863609 Fax : (01429) 863581

**ISOCOM INC**  
1024 S. Greenville Ave, Suite 240,  
Allen, TX 75002 USA  
Tel: (214) 495-0755 Fax: (214) 495-0901  
e-mail info@isocom.com  
http://www.isocom.com

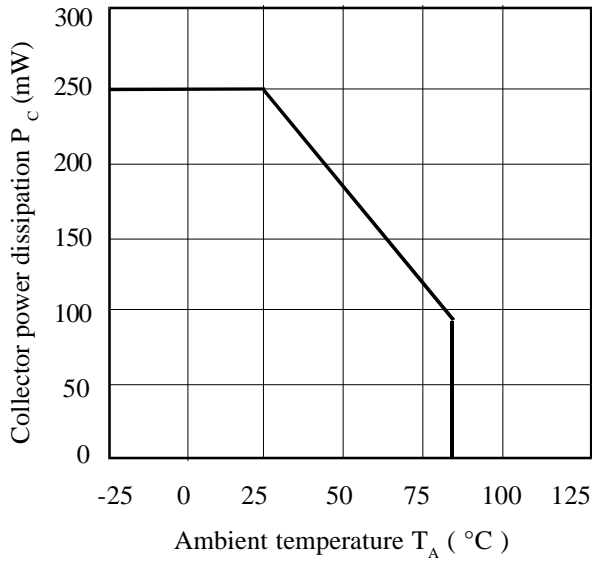
**ABSOLUTE MAXIMUM RATINGS (25°C unless otherwise specified)**

|  |                 |
|--|-----------------|
| Storage Temperature                            | -40°C to +100°C |
| Operating Temperature                          | -25°C to +85°C  |
| Lead Soldering Temperature<br>(5 secs maximum) | 260°C           |
| Power Dissipation                              | 250 mW          |
| Output Current                                 | 50mA            |
| Allowed Range $V_{31}$                         | 0 to 35V        |
| Allowed Range $V_{21}$                         | 0 to 40V        |

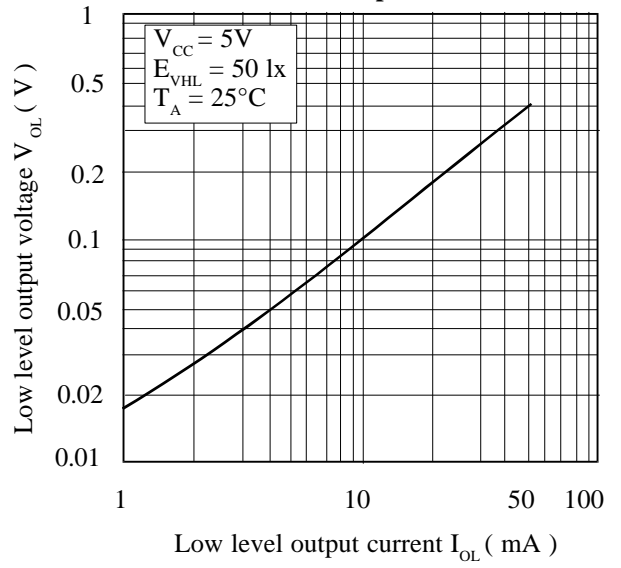
**ELECTRICAL CHARACTERISTICS (  $T_A = 0^\circ\text{C}$  to  $70^\circ\text{C}$ ,  $V_{CC} = 5\text{V}$  Unless otherwise noted )**

| PARAMETER  |                                    | MIN  | TYP                   | MAX                   | UNITS  | TEST CONDITIONS  |
|--|------------------------------------|------|-----------------------|-----------------------|--|--|
| High Level Output Current<br>Low Level Output Voltage                                  | $I_{OH}$<br>$V_{OL}$               |      |                       | 100<br>0.4            | $\mu\text{A}$<br>V   | $V_{CC} = 20\text{V}$ , $V_O = 30\text{V}$ , $E_V = 0$<br>$I_{OL} = 16\text{mA}$ , $E_V = 50 \text{ lx}$                               |
| Supply Current   | $I_{CCL}$<br>$I_{CCH}$             |      |                       | 4.5<br>3              | mA<br>mA   | $E_V = 50 \text{ lx}$<br>$E_V = 0$   |
| High to Low Threshold Illumination<br>Low to High Threshold Illumination               | $E_{VHL}$<br>$E_{VLH}$             |      | 15<br>10              | 35<br>50              | lx<br>lx<br>lx<br>lx   | $T_A = 25^\circ\text{C}$ , $R_L = 280\Omega$<br>$R_L = 280\Omega$<br>$T_A = 25^\circ\text{C}$ , $R_L = 280\Omega$<br>$R_L = 280\Omega$ |
| Hysteresis   | $\frac{E_{VLH}}{E_{VHL}}$          | 0.50 | 0.65                  | 0.90                  |  | $T_A = 25^\circ\text{C}$ , $R_L = 280\Omega$   |
| High to Low Propagation Time<br>Low to High Propagation Time<br>Rise Time<br>Fall Time | $t_{PHL}$<br>$t_{PLH}$<br>tr<br>tf |      | 3<br>5<br>0.1<br>0.05 | 9<br>15<br>0.5<br>0.5 | $\mu\text{s}$<br>$\mu\text{s}$<br>$\mu\text{s}$<br>$\mu\text{s}$ | $T_A = 25^\circ\text{C}$ , $E_V = 50 \text{ lx}$<br>$R_L = 280\Omega$  |

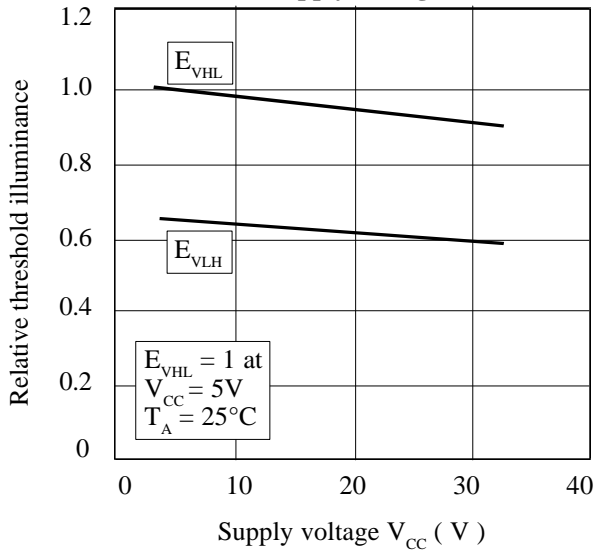
**Collector Power Dissipation vs. Ambient Temperature**



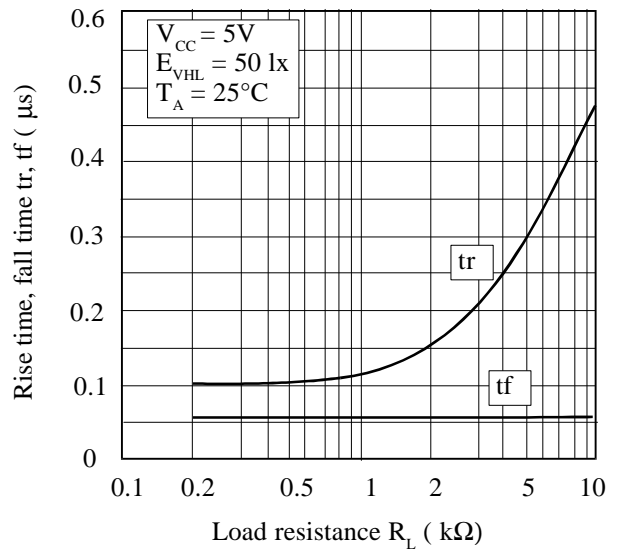
**Low Level Output Voltage vs. Low Level Output Current**



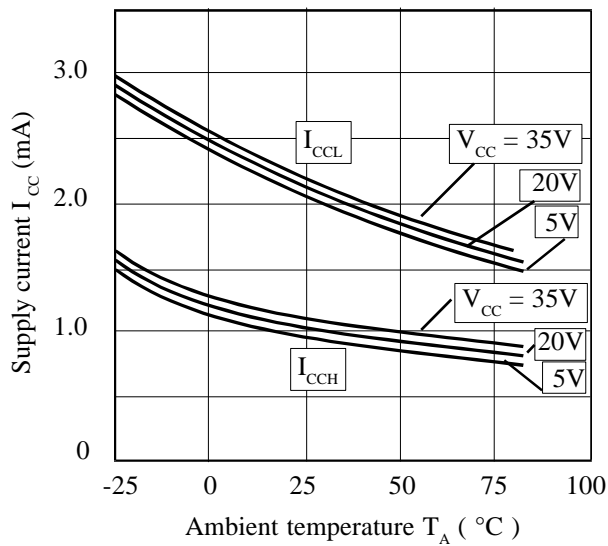
**Relative Threshold Illuminance vs. Supply Voltage**



**Rise Time, Fall Time vs. Load Resistance**



**Supply Current vs. Ambient Temperature**



**Low Level Output Voltage vs. Ambient Temperature**

